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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/657,649	09/08/2003	John R. Regalbuto	4264.73185	2835
24978	7590	05/24/2007		
GREER, BURNS & CRAIN 300 S WACKER DR 25TH FLOOR CHICAGO, IL 60606			EXAMINER HAILEY, PATRICIA L	
			ART UNIT 1755	PAPER NUMBER
			MAIL DATE 05/24/2007	DELIVERY MODE PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/657,649	<b>Applicant(s)</b> REGALBUTO ET AL.	
	<b>Examiner</b> Patricia L. Hailey	<b>Art Unit</b> 1755	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 06 March 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-13 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-13 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                       | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

Applicants' remarks and amendments, filed on March 6, 2007, have been carefully considered. No claims have been canceled or added; claims 1-13 remain pending in this application.

### ***Maintained Rejections***

The following rejections of record have been maintained; the text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

### ***Claim Rejections - 35 USC § 102***

- 1. Claims 1, 2, 4, and 5 stand rejected under 35 U.S.C. 102(b) as being anticipated by Ebner et al. (U. S. Patent No. 6,417,133, Applicants' submitted art).***

Ebner et al. teach a catalyst comprising a noble metal such as platinum deposited on a carbon support having a BET surface area ranging from about 10 to about 3000 m<sup>2</sup>/g (col. 10, lines 16-23, considered to read upon the limitation "carbon substrate", as well as the limitations regarding the PZC values of said substrate), wherein the noble metal is deposited on the support using a solution comprising a salt of the noble metal, such as H<sub>2</sub>PtCl<sub>6</sub>, K<sub>2</sub>PtCl<sub>4</sub> or diamminedinitrito platinum (II). See col. 16, lines 23-53 of Ebner et al.

In a preferred embodiment, reactive deposition is used to form metal particles wherein a surface of a carbon support is contacted with a solution comprising a reducing agent and a compound comprising the noble metal. Exemplary compounds

include halide compounds and amine complexes corresponding to Applicants' claims 4, 5, and 7-9. See col. 17, lines 14-41 of Ebner et al.

After the carbon support has been impregnated with the noble metal(s), reduction is performed by heating the surface. See col. 19, lines 5-48 of Ebner et al.

In view of these teachings, Ebner et al. anticipate claims 1, 2, 4, and 5.

**2. *Claims 1 and 3-13 stand rejected under 35 U.S.C. 102(e) as being anticipated by Fischer et al. (U. S. Patent No. 6,676,919).***

Fischer et al. disclose a method for producing catalysts by immersion coating a metallic support with at least one platinum metal. An aqueous medium which comprises at least one platinum metal complex, at least one reduction agent, and at least one complexer and which has a pH value of more than 4 is brought into contact with the metallic metal support in order to deposit the platinum metal, which is deposited in the form of discrete, immobilized particles. See the Abstract of Fischer et al.

Suitable combinations of ligands and counterions for platinum metal complexes include halides and pseudohalides, e.g., chloride (defined as "negatively charged ligands", which is considered to read upon Applicants' "anionic complex"), ethylenediamine, diethylenetriamine, pyridine, and phenanthroline (defined as "electrically neutral ligands", which is considered to read upon Applicants' "cationic complex" as recited in claim 5). See col. 5, lines 9-67 of Fischer et al., which, at lines 66 and 67, also disclose additional platinum metal complexes reading on the "chloro or chlorohydroxoquo" complexes recited in **claims 7-9**.

The above teachings are considered to read upon **claims 4, 5, 7-9, and 11-13**.

The deposition of the platinum metal is advantageously carried out at a pH of the aqueous medium of greater than 4, preferably greater than 6, and in particular from 8 to 12. In general, the process is carried out at temperatures ranging from 0 to 100°C. See col. 6, lines 48-51 and col. 7, lines 61-65 of Fischer et al.

At col. 7, line 66 to col. 8, line 20 of Fischer et al., exemplary metallic supports are discussed; this excerpt also discloses that the metallic supports may also contain carbon, in amounts of up to 25% by weight (col. 8, lines 19 and 20). This disclosure is considered to read upon the limitation "carbon substrate", as well as the limitations regarding the PZC values of the carbon substrate.

At col. 12, lines 8-20 of Fischer et al., the reference discloses that the "reaction time required for the deposition of the platinum metal on the metallic supports is generally from 5 to 500 minutes", and that the "platinum metal is generally bound so firmly to the metallic support that no appreciable detachment occurs as a result of contact with liquids and gases during use in catalytic reactions." This disclosure is considered to read upon Applicants' claim limitations with respect to "maintaining said contact...for a time period sufficient for said platinum metal element complex to adsorb onto said substrate..."

The catalysts prepared by the process of Fischer et al. can subsequently be activated at from 0 to 500°C; activation can be carried out in the presence of water and/or hydrogen, preferably hydrogen. See col. 12, lines 42-56 of Fischer et al.; this disclosure is considered to read upon Applicants' claim limitations with respect to

Art Unit: 1755

"heating said platinum metal complex-loaded substrate under reducing conditions at a temperature of about 200°C to about 300°C..."

In view of these teachings, Fischer et al. anticipate claims 1 and 3-13.

### ***Response to Arguments***

In response to Applicants' argument that the Ebner references "fails to disclose a method that controls the pH of the platinum metal element solution used to contact the platinum metal element with the carbon substrate", it is the Examiner's position that Applicants' claims in their present form do not recite such pH control. Applicants' claims appear to recite the employment of either a cationic or an anionic complex, depending on the pH value, to contact a carbon substrate.

Although Ebner et al. may not recite the term "pH" or disclose any pH conditions, the cited reference does disclose platinum salts that read upon Applicants' claimed anionic and cationic complexes. Because said salts are disclosed in the prior art, one of ordinary skill in the art would readily deduce that such employment would be performed at Applicants' claimed pH conditions.

Further, Ebner et al. is not seen to require "to teach use of a different contacting solution based on whether the platinum metal element is present as a cationic or anionic complex." Ebner et al. at col. 17, lines 14-53 disclose exemplary solutions suitable for reductive deposition onto a carbon support, said solutions including  $K_2PtCl_4$ ,  $H_2PtCl_6$ , which are considered to read upon Applicants' "halo or halohydroxoquo complex" (e.g., claims 4, 5, and 7-9).

In response to Applicants' arguments regarding the PZC value of the carbon substrate, Applicants' have not presented any convincing evidence that there "is absolutely no connection" between BET surface area and PZC, nor have Applicants shown that the carbon supports disclosed in Ebner et al. do not exhibit a PZC comparable to that instantly claimed.

In response to Applicants' arguments that there "is no suggestion of changing the pH of the contacting solution based upon whether the platinum metal element is present as a cationic or an anionic complex", it is the Examiner's position that because Fischer et al. disclose platinum metal complexes that read upon the instant claims, "changing the pH" does not appear to be necessary. Applicants' claims in their present form appear to recite contact with an aqueous solution of a dissolved platinum metal element complex that is either (a) present at a pH value of about 2 to about 4, where said platinum metal element is present as an anionic complex, or (b) present at a pH value of about 10.5 to about 13, where said platinum metal element is present as a cationic complex. Further, the reference's teaching of a "pH of greater than 4" is considered to read upon Applicants' "pH value of about 10.5 to about 13", especially since Fischer et al. disclose exemplary platinum metal complexes including ethylenediamine, diethylenetriamine, pyridine, and phenanthroline, which read upon Applicants' "cationic complex. These complexes, combined with the pH range disclosed in Fischer et al. (col. 6, lines 48-51), read upon the aforementioned condition (b).

3. In response to applicant's argument that the examiner's conclusion of obviousness is based upon improper hindsight reasoning, it must be recognized that

Art Unit: 1755

any judgment on obviousness is in a sense necessarily a reconstruction based upon hindsight reasoning. But so long as it takes into account only knowledge which was within the level of ordinary skill at the time the claimed invention was made, and does not include knowledge gleaned only from the applicant's disclosure, such a reconstruction is proper. See *In re McLaughlin*, 443 F.2d 1392, 170 USPQ 209 (CCPA 1971).

For these reasons, Applicants' arguments are not persuasive, and the rejections of record are maintained.

### ***Conclusion***

4. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Patricia L. Hailey whose telephone number is (571) 272-



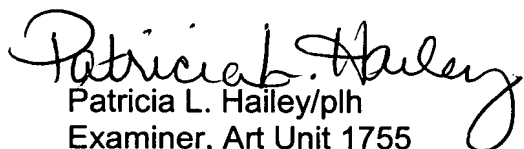
Art Unit: 1755

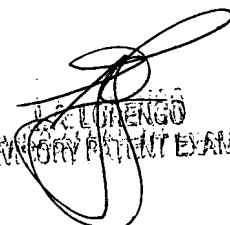
1369. The examiner can normally be reached on Mondays-Fridays, from 7:00 a.m. to 3:30 p.m.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jerry Lorengo, can be reached on (571) 272-1233. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group 1700 Receptionist, whose telephone number is (571) 272-1700.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

  
Patricia L. Hailey/plh  
Examiner, Art Unit 1755  
May 15, 2007

  
J. LORENZO  
SUPERVISORY PATENT EXAMINER